

REMARKS

Claims 17-39 are pending. Claims 17, 21, 25, 32, 33 and 39 have been amended to better describe the invention.

The Amendments

Claims 17, 21 and 33 have been amended to recite specific examples of metal catalysts. Ample support for the amendment exists in the Application, for example, page 17, lines 18-28. Claims 30, 32, and 35 have been amended to delete references to metals and mixtures of metals other than palladium. Claims 17, 21, 25, 33 and 39 have been amended to replace the term "at least" with the synonym "at minimum" to improve the clarity of the claims.

The Enablement Rejection

Claims 17-25, 29, 31, 33-34, and 36-39 are rejected under 35 U.S.C. § 112, first paragraph, due to the Examiner's assertion that the disclosure is not enabling to perform the claimed methods "using any metal catalysts generally." The Examiner concedes that the disclaimer is enabling for the use of, *inter alia*, platinum, ruthenium, gold, copper, tin, palladium, rhodium, osmium, iridium, and mixtures thereof, and, therefore, the claims have been amended to recite specific examples of metal catalysts. In light of the amendment, the rejection is moot. Therefore, it is respectfully requested that the rejection of claims 17-25, 29, 31, 33-34, and 36-39 under 35 U.S.C. § 112, first paragraph, be withdrawn.

The Clear Claiming Rejection

Claims 17-39 have been rejected under 35 U.S.C. § 112, second paragraph, due to the alleged vagueness of the term "at least about" recited in claims 17, 21, 25, 33 and 39.

The whole of the term “at least about” is not meant as a single term used to modify a quantity, and therefore, create an ambiguity. Rather the term “at least about” is meant to be two terms as follows: 1. the term “at least” is meant to indicate that the values recited indicate the low end of a range; and 2. the term “about” is meant to modify the quantity recited. Nevertheless, the term “at least” has been amended to the synonym “at minimum” in order to increase clarity. Therefore, it is respectfully requested that the rejection of claims 17-39 under 35 U.S.C. § 112, second paragraph, be withdrawn.

#### The Anticipation Rejection

Claims 17-39 have been rejected under 35 U.S.C. § 102(a) as being anticipated by Romanenko et al (WO 01/087798). Romanenko et al relates to metal catalysts on a carbon support for the purification of terephthalic acid.

In order to establish anticipation, a single prior art reference must disclose each and every claim limitation. Claim 17 recites, *inter alia*, a carbonaceous material comprising two sets of pores, wherein one set of pores has a diameter in the range from about 5,000 to 20,000 angstroms with a porosity of at least about 0.3 cc/g. Romanenko et al does not disclose this limitation.

The Examiner points out with particularity page 11, Table 1 of Romanenko et al stating that “[t]his is identical with the claims.” (Office Action, page 12). Table 1 states the porosity (or volume per gram) of several carbon materials for pores in several different diameter ranges. However, the porosity for the largest diameter of pores stated is for those pores whose diameter is **less than** 5,000 angstroms (denoted by the symbol  $V_{\Sigma}$ ). Claim 14 recites limitations for a set of pores having a diameter **greater than** 5,000 angstroms with a minimum porosity of about 0.3 cc/g. The symbol  $V_{\Sigma}$  is well understood by those skilled in the art to indicate the volume of ALL pores in the material, since  $\Sigma$ , sigma, is understood in the physical sciences to stand for a summation (as in the sum of all pore volumes or total porosity). Therefore, the use of

the term  $V_{\Sigma}$  in conjunction with the range of 5,000 angstroms or less to define  $V_{\Sigma}$  is indicative of the materials in Table 1 having no significant porosity for pores greater than 5,000 angstroms in diameter. Further, Table 1 also lists the mean pore diameter,  $D_{mean}$ , for the given materials wherein the mean for all materials is in the meso range (typically understood in the art as pores with a minimum diameter of about 20 angstroms and a maximum diameter of no more than about 200 angstroms). The low mean pore diameter makes it highly unlikely that there is significant porosity for diameters larger than 5000 angstroms, as recited in claim 1.

Still Further, under footnote 4 to Table 1, the formula for calculating the porosity of pores in the meso range is given as  $V_{meso} = V_{\Sigma} - V_{micro}$ ; in order for the porosity of pores in the meso range to be a simple difference between total porosity ( $V_{\Sigma}$ ) and micro porosity ( $V_{micro}$ ), there must be **no significant porosity in pores having a diameter greater than the meso range**. It should be noted that the large pore diameters disclosed by the Application are created by a physical extrusion process performed on the carbonaceous materials, and Romanenko et al does not describe any such extrusion process being performed. Therefore, it does not appear that Romanenko et al teaches a set of pores greater than the meso range, nevertheless, a set of pores having a diameter from 5,000-20,000 angstroms with a minimum porosity of about 0.3 cc/g.

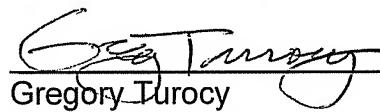
Claims 18-20 and 29-30 incorporate all the limitations of claim 17 and are not anticipated for at least the same reasons claim 17 is not anticipated. Independent claims 21 and 33 recite limitations for total Hg porosity that can only be satisfied by materials having significant macro and super-macro diameter range porosity. As discussed, Romanenko et al does not appear to teach materials with significant porosity above the meso range of pore diameters. Therefore, claims 21, 33, and claims dependent from claims 21 and 33 are not anticipated as well. Therefore, it is respectfully requested that the rejection of claims 17-39 under 35 U.S.C. § 102(a) be withdrawn.

Should the Examiner believe that a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

In the event any fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to our Deposit Account No. 50-1063.

Respectfully submitted,

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